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10/824,363	04/15/2004	Chang Nam Kim	117610-05098	6306

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EXAMINER

GUHARAY, KARABI

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2889

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/824,363	Applicant(s) KIM, CHANG NAM	
	Examiner Karabi Guharay	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment, filed on 6/15/2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7,10,12,13,24 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,10,12,13,24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/31/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

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Response to Amendment

Amendment, filed on 6/15/2010, has been considered and entered.

Claim 4 is canceled.

Claims 1, 24 & 26 are amended.

Response to Arguments

Applicant's arguments, filed on 6/15/2010, have been fully considered and are persuasive. Upon further consideration, following rejection of pending claims are presented below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 5-7, 10, 12-13, 24, 26 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA), in view of Fleming et al. (US 6,111,357), further in view of Kim et al. (US 2002/0014837).

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Regarding claims 1, AAPA discloses an organic EL display device (see Fig 1 & Fig 2E) comprising a glass substrate (101), an ITO strip or first electrode layer (102), which is an anode layer; a counter electrode (103), an organic EL layer (104); a cathode strip (105), and a seal cover (109) over the glass substrate (101, see Fig 1) wherein the organic EL layer is formed between ITO strip and the cathode strip or second electrode layer (105), the counter electrode has holes (see Fig 7B) having a shape of polygon, AAPA further discloses an insulating layer 106 between the ITO strip and the cathode strip and a sealant (108) to adhere the seal cover (109) over the glass substrate, and the insulating layer is extended to an area of glass substrate so as to be formed on a periphery of the organic layer 104 (see Fig1).

But AAPA fails to disclose a plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of a cross and wherein a first distance between holes along the first direction is smaller than a second distance between holes arranged along the second direction.

However, Fleming et al. in the same filed of OLED, discloses counter electrode (20) having grid like holes (see Fig 6B & 6C) in the seal region (see Fig 1A), wherein plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of either circle , elliptical or polygon such as rectangle or triangle (lines 12-16 of column 7) in order to provide a radiation cured perimeter seal through the patterned holes region (24) of the counter electrode (metallized leads) to permit sufficient radiation directed to seal zone while maintaining sufficient required conductivity (lines 57-65 of column 3), though , Fleming et al. do not explicitly disclose that the aperture is in the shape of a cross.

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However, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical polygon such as triangle or cross.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide grid like holes, having a shape of a one of circle, **cross** or triangle, as arranged by Flemings in the device of AAPA, in order to have complete curing of seal through counter electrode while maintaining sufficient conductivity of the counter electrode.

Further AAPA, does not disclose that the insulating layer extends to meet the crossing point of counter electrode and the sealant.

However, Kim et al., in the same field of Organic EL display, discloses insulating layer (106 of Fig 3K) which extends to the glass substrate including the crossing of counter electrode and the sealant (encapsulate 111), so as to insulate opposite electrodes.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to extend the insulating layer to include the crossing of counter electrode and the sealant as taught by Kim et al., since extension of insulating layer to cover the crossing of counter electrode and the sealant will provide better insulation of the device.

Regarding claim 3, AAPA discloses that the counter electrode (103) is formed of Mo and Cr (Paragraph 12).

Regarding claim 5, AAPA discloses that the cathode strip is formed of Mg-Ag alloy and aluminum (Paragraph 14).

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Regarding claims 6, 24, & 26, AAPA discloses a method of fabricating an organic EL display device (see Fig 2B) comprising forming an ITO strip or first electrode layer(102, 102A) on a glass substrate (101), forming a counter strip (103) on the ITO strip (102A) located in regions other than an emitting region (see Fig 2B) patterning in the counter strip or a second electrode layer to have holes (see Fig 2b, 2C, 2D, & 7B paragraph 19), forming a first insulating layer (106 of Fig 2C) on the glass substrate having ITO strip, between ITO strip and the cathode strip and the insulating layer extends to a predetermined area, to an area of the glass substrate so as to be formed on a periphery of the electroluminescent layer 104(see Fig 1) forming barrier ribs (107) on the insulating layer (106, see Fig 2D); forming an EL layer (104) and a cathode strip (105, see Fig 2F); and adhering seal cover (109) using a sealant (108) to the glass substrate (see Fig 2F).

But AAPA fails to disclose a plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of cross and wherein a first distance between holes along the first direction is smaller than a second distance between holes arranged along the second direction.

However, Fleming et al. in the same filed of OLED, discloses counter electrode (20) having grid like holes (see Fig 6B & 6C) in the seal region (see Fig 1A), wherein plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of either circle, elliptical or polygon such as rectangle or triangle (lines 12-16 of column 7) in order to provide a radiation cured perimeter seal through the patterned holes region (24) of the counter electrode (metallized leaders) to permit sufficient radiation directed to seal zone while maintaining sufficient required

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conductivity (lines 57-65 of column 3), though , Fleming et al. do not explicitly disclose that the aperture is in the shape of a cross, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical, polygon such as triangle or cross or any combination of polygon and a circle.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide grid like holes, having a shape of one of circle, ellipse, rectangle **cross** or triangle as arranged by Flemings in the device of AAPA, in order to have complete curing of seal through counter electrode while maintaining sufficient conductivity of the counter electrode.

Further AAPA, does not disclose that the insulating layer extends to meet the crossing point of counter electrode and the sealant.

However, Kim et al., in the same field of Organic EL display, discloses insulating layer (106 of Fig 3K) which extends to the glass substrate including the crossing of counter electrode and the sealant (encapsulate 111), so as to insulate opposite electrodes.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to extend the insulating layer to include the crossing of counter electrode and the sealant as taught by Kim et al., since extension of insulating layer to cover the crossing of counter electrode and the sealant will further provide better insulation of the device.

Regarding claim 7, AAPA discloses that that the counter strip (103) has a width smaller than that of ITO strip (see paragraph 8).

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Regarding claims 12-13, Flemings et al. disclose that the anode and cathode strip overlap to form one or more pixel areas and wherein the counter electrode includes multiple first and second holes in the first and second direction (see Fig 1A; lines 36-49 of column 2). The same reason for combining art as in claim 6 applied.

Regarding claims 10 & 27-28, Flemings et al. disclose that the anode and cathode strip overlap to form one or more pixel areas and wherein the counter electrode includes multiple first and second holes in the first and second direction (see Fig 1A; lines 36-49 of column 2). The same reason for combining art as in claim 1 & 24 applies.

Regarding claim 29, Fleming et al. disclose that portions of the counter electrode are located between adjacent pairs of the first holes aligned in the first direction, and portions of the counter electrode are located between adjacent pairs of the second holes aligned in the second direction (Fig 6A-6C). The same reason for combining art as in claim 1 applies.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00Am-5:30 PM.

Any attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on 571-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karabi Guharay/
Primary Examiner, Art Unit 2889